

# Freeform Search

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## Search History

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**DATE:** Friday, March 18, 2005 [Printable Copy](#) [Create Case](#)

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
		result set	
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ</i>			
<u>L21</u>	l20 same 115	68	<u>L21</u>
<u>L20</u>	l13 with lysine	677	<u>L20</u>
<u>L19</u>	l13 with polylysine	393	<u>L19</u>
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<u>L17</u>	modified	1621054	<u>L17</u>
<u>L16</u>	L15 same L14	15	<u>L16</u>
<u>L15</u>	dna or nucleic or gene or polynucleotide	412038	<u>L15</u>
<u>L14</u>	L13 same L11	412	<u>L14</u>
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<u>L11</u>	combination	3271661	<u>L11</u>
<u>L10</u>	L8 same L6	43	<u>L10</u>
<u>L9</u>	L8 same L7	101435	<u>L9</u>
<u>L8</u>	L7 or L3	138486	<u>L8</u>
<u>L7</u>	arginine or positive charge	101435	<u>L7</u>
<u>L6</u>	L5 with L1	624	<u>L6</u>

<u>L5</u>	transpo\$ or deliv\$ or transfe\$	4142171	<u>L5</u>
<u>L4</u>	L3 with L2	7	<u>L4</u>
<u>L3</u>	lysine or polylysine	88412	<u>L3</u>
<u>L2</u>	hexa with histidine	3368	<u>L2</u>
<u>L1</u>	polyhistidine or (poly with histidine)	7422	<u>L1</u>

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L4: Entry 7 of 7

File: DWPI

Jul 5, 2001

DERWENT-ACC-NO: 2001-425579

DERWENT-WEEK: 200380

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TITLE: Pharmaceutical composition useful for delivering therapeutic agent for treating diseases, comprises a peptide characterized with specified number of amino acids and a specified percentage of histidine residues

INVENTOR: MIXSON, A J

PATENT-ASSIGNEE:

ASSIGNEE	CODE
MIXSON A J	MIXSI

PRIORITY-DATA: 1999US-173576P (December 29, 1999), 2001US-0018103 (November 5, 2001), 2002US-0131909 (April 25, 2002)

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PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<input type="checkbox"/> <a href="#">WO 200147496 A1</a>	July 5, 2001	E	064	A61K009/14
<input type="checkbox"/> <a href="#">AU 200122812 A</a>	July 9, 2001		000	A61K009/14
<input type="checkbox"/> <a href="#">EP 1242052 A1</a>	September 25, 2002	E	000	A61K009/14
<input type="checkbox"/> <a href="#">US 20030045465 A1</a>	March 6, 2003		000	A61K038/10
<input type="checkbox"/> <a href="#">US 20030165567 A1</a>	September 4, 2003		000	A61K038/16

DESIGNATED-STATES: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
WO 200147496A1	December 20, 2000	2000WO-US34603	
AU 200122812A	December 20, 2000	2001AU-0022812	
AU 200122812A		WO 200147496	Based on
EP 1242052A1	December 20, 2000	2000EP-0986605	
EP 1242052A1	December 20, 2000	2000WO-US34603	

EP 1242052A1		WO 200147496	Based on
US20030045465A1	December 20, 2000	2000WO-US34603	
US20030045465A1	November 5, 2001	2001US-0018103	
US20030165567A1	December 29, 1999	1999US-173576P	Provisional
US20030165567A1	December 20, 2000	2000WO-US34603	CIP of
US20030165567A1	November 5, 2001	2001US-0018103	CIP of
US20030165567A1	April 25, 2002	2002US-0131909	

INT-CL (IPC): A61 K 9/127; A61 K 9/14; A61 K 38/08; A61 K 38/10; A61 K 38/16; A61 K 48/00; C07 K 14/00; C12 N 15/00; C12 N 15/63; C12 N 15/88

RELATED-ACC-NO: 2003-865520

ABSTRACTED-PUB-NO: WO 200147496A

BASIC-ABSTRACT:

**NOVELTY** - A pharmaceutical agent delivery composition (I) comprises a transport polymer (II) comprising a peptide (P), characterized as having at least 10 amino acid residues, where at least 10% of the amino acid residues are histidine, and a pharmaceutical agent is associated with (II).

**DETAILED DESCRIPTION** - The molecular structure of (P) is linear, with the proviso that the entire sequence of the peptide cannot be described by the formula (XHHX)<sub>n</sub> or (XHXH)<sub>n</sub>, where H is histidine, X is a hydrophobic amino acid, and n is an integer at least 4, and the peptide does not comprise a hexa-peptide having the sequence (His)<sub>6</sub>, unless and at least 10% of the remaining amino acid residues of the peptide are histidine, or is branched, with a backbone peptide of 1 or more amino acid residues and at least one peptide branch of 1 or more amino acid residues covalently attached to a side-group of an amino acid residue of the backbone peptide, with the proviso that each peptide branch consists of a single histidine residue only if the backbone peptide does not consist solely of lysine residues.

An INDEPENDENT CLAIM is also included for producing (I).

**ACTIVITY** - Antisickling; antianemic; nootropic; cardiant; cytostatic; hemostatic; antiparkinsonian; antiarthritic; anti-HIV; antidiabetic; virucide.

**MECHANISM OF ACTION** - Gene therapy. No supporting data given.

**USE** - (I) is useful for delivering a pharmaceutical agent to the interior of a cell, by removing cells from a subject, contacting the cells with (I), and administering the cell to the subject after contacting the cell with (I) (claimed). (I) is useful for treating adenosine deaminase deficiency, purine nucleoside phosphorylase deficiency, chronic granulomatous disease with defective p47phox, sickle cell with HbS, beta -thalassemia due to inadequate production of beta - hemoglobin, Faconi's anemia, familial hypercholesterolemia due to a defective low-density lipoprotein receptor, alpha 1-antitrypsin deficiency, phenylketonuria due to phenylalanine hydroxylase deficiency, ornithine transcarbamylase deficiency, apolipoprotein E deficiency, hemophilia A and B due to factor VIII and IX deficiency, respectively, muscular dystrophy due to dystrophin, laminin-2, or sacroglycans mutations, cystic fibrosis due to CFTR mutations, Parkinson due to tyrosine hydroxylase deficiency, retinitis pigmentosa, lysosomal storage disease (i.e., mycopolysaccharide type 1, Hunter, Hurler and Gaucher), diabetic retinopathy, human immunodeficiency virus disease, virus infection, acquired

anemia, cardiac and peripheral vascular disease and arthritis.

CHOSEN-DRAWING: Dwg.0/18

TITLE-TERMS: PHARMACEUTICAL COMPOSITION USEFUL DELIVER THERAPEUTIC AGENT TREAT  
DISEASE COMPRISE PEPTIDE CHARACTERISTIC SPECIFIED NUMBER AMINO ACID SPECIFIED  
PERCENTAGE HISTIDINE RESIDUE

DERWENT-CLASS: B04 D16

CPI-CODES: B04-C01; B04-C01B; B04-E01; B12-M05; B14-A02; B14-A02B1; B14-C09; B14-F01; B14-F06; B14-H01; B14-J01A; B14-J01A3; B14-J01A4; B14-S03; B14-S04; D05-C01; D05-C11; D05-H10; D05-H12;

CHEMICAL-CODES:

Chemical Indexing M1 \*01\*

Fragmentation Code

F014 F019 F521 F599 H1 H101 H183 J0 J014 J1  
J171 J3 J373 M280 M312 M315 M323 M343 M349  
M371 M381 M393 M423 M431 M510 M523 M530 M540 M720  
M782 M904 M905 N153 P210 P421 P444 P517 P522 P617  
P812 P815 P816 P820 P823 P922 Q233

Specfici Compounds

A4JPBK A4JPBT A4JPBQ A4JPBM A4JPBP

Chemical Indexing M1 \*02\*

Fragmentation Code

F014 F019 F521 F599 H1 H101 H183 J0 J014 J1  
J171 J3 J373 M280 M311 M312 M315 M321 M323 M332  
M342 M343 M349 M371 M381 M393 M423 M431 M510 M523  
M530 M540 M720 M782 M904 M905 N153 P210 P421 P444  
P517 P522 P617 P812 P815 P816 P820 P823 P922 Q233

Specfici Compounds

A4JPFK A4JPFT A4JPFQ A4JPFM A4JPFP

Chemical Indexing M1 \*03\*

Fragmentation Code

F014 F019 F521 F599 H1 H101 H183 J0 J014 J1  
J171 J3 J373 M280 M311 M312 M315 M321 M323 M332  
M342 M343 M349 M371 M381 M393 M423 M431 M510 M523  
M530 M540 M720 M782 M904 M905 N153 P210 P421 P444  
P517 P522 P617 P812 P815 P816 P820 P823 P922 Q233

Specfici Compounds

A4JPRK A4JPRT A4JPRQ A4JPRM A4JPRP

Chemical Indexing M1 \*04\*

Fragmentation Code

F014 F019 F521 F599 H1 H101 H183 J0 J014 J1  
J171 J3 J373 M280 M311 M312 M315 M321 M323 M332  
M342 M343 M349 M371 M381 M393 M423 M431 M510 M523  
M530 M540 M720 M782 M904 M905 N153 P210 P421 P444  
P517 P522 P617 P812 P815 P816 P820 P823 P922 Q233

Specfici Compounds

A4JPXK A4JPXT A4JPXQ A4JPXM A4JPXP

Chemical Indexing M1 \*05\*

Fragmentation Code

F014 F019 F521 F599 H1 H101 H183 J0 J014 J1

J171 J3 J373 M280 M311 M312 M315 M322 M323 M332  
M342 M343 M349 M371 M381 M393 M423 M431 M510 M523  
M530 M540 M720 M782 M904 M905 N153 P210 P421 P444  
P517 P522 P617 P812 P815 P816 P820 P823 P922 Q233  
Specfic Compounds  
A4JPZK A4JPZT A4JPZQ A4JPZM A4JPZP

## Chemical Indexing M1 \*06\*

Fragmentation Code  
F014 F019 F521 F599 H1 H101 H183 J0 J014 J1  
J171 J3 J373 M280 M312 M315 M323 M332 M343 M349  
M371 M381 M393 M423 M431 M510 M523 M530 M540 M720  
M782 M904 M905 N153 P210 P421 P444 P517 P522 P617  
P812 P815 P816 P820 P823 P922 Q233  
Specfic Compounds  
A4JQ1K A4JQ1T A4JQ1Q A4JQ1M A4JQ1P

## Chemical Indexing M1 \*07\*

Fragmentation Code  
M423 M431 M530 M540 M720 M782 M904 M905 N153 P210  
P421 P444 P517 P522 P617 P812 P815 P816 P820 P823  
P922 Q233  
Specfic Compounds  
A4JQ3K A4JQ3T A4JQ3Q A4JQ3M A4JQ3P

## Chemical Indexing M1 \*08\*

Fragmentation Code  
F014 F019 F521 F599 H1 H101 H183 J0 J014 J1  
J171 J3 J373 M280 M312 M315 M323 M332 M343 M349  
M371 M381 M393 M423 M431 M510 M523 M530 M540 M720  
M782 M904 M905 N153 P210 P421 P444 P517 P522 P617  
P812 P815 P816 P820 P823 P922 Q233  
Specfic Compounds  
A4JQMK A4JQMT A4JQMQ A4JQMM A4JQMP

## Chemical Indexing M1 \*09\*

Fragmentation Code  
F014 F019 F521 F599 H1 H101 H183 J0 J014 J1  
J171 J3 J373 M280 M311 M312 M315 M321 M323 M332  
M342 M343 M349 M371 M381 M393 M423 M431 M510 M523  
M530 M540 M720 M782 M904 M905 N153 P210 P421 P444  
P517 P522 P617 P812 P815 P816 P820 P823 P922 Q233  
Specfic Compounds  
A4JRGK A4JRGKT A4JRGQ A4JRGMM A4JRGMP

## Chemical Indexing M1 \*10\*

Fragmentation Code  
M423 M431 M720 M782 M905 N153 P210 P421 P444 P517  
P522 P617 P812 P815 P816 P820 P823 P922 Q233  
Specfic Compounds  
A00H1K A00H1T A00H1Q A00H1M A00H1P

## Chemical Indexing M1 \*11\*

Fragmentation Code  
M423 M431 M782 M905 P210 P421 P444 P517 P522 P617  
P812 P815 P816 P820 P823 P922 Q233  
Specfic Compounds  
A00H3K A00H3T A00H3Q A00H3M

## Chemical Indexing M1 \*12\*

Fragmentation Code  
M423 M431 M782 M905 P210 P421 P444 P517 P522 P617  
P812 P815 P816 P820 P823 P922 Q233  
Specfic Compounds  
A00NSK A00NST A00NSQ A00NSM

Chemical Indexing M1 \*13\*

Fragmentation Code  
M423 M431 M782 M905 P210 P421 P444 P517 P522 P617  
P812 P815 P816 P820 P823 P922 Q233  
Specfic Compounds  
A012PK A012PT A012PQ A012PM

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2001-128774

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L10: Entry 23 of 43

File: PGPB

Jul 5, 2001

PGPUB-DOCUMENT-NUMBER: 20010006817  
PGPUB-FILING-TYPE: new-utility  
DOCUMENT-IDENTIFIER: US 20010006817 A1

TITLE: CELL DELIVERY COMPOSITIONS

PUBLICATION-DATE: July 5, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
PACK, DANIEL W.	CHAMPAGNE	IL	US	
PUTNAM, DAVID A.	CAMBRIDGE	MA	US	
LANGER, ROBERT S.	NEWTON	MA	US	

APPL-NO: 09/ 251783 [PALM]  
DATE FILED: February 17, 1999

CONTINUED PROSECUTION APPLICATION: CPA

## RELATED-US-APPL-DATA:

Application is a non-provisional-of-provisional application 60/075272, filed February 19, 1998,

INT-CL: [07] C12 Q 1/68, C07 H 21/02, C07 H 21/04, C12 N 15/00, A61 K 31/70, A01 N 43/04, C12 P 21/06, C12 P 19/34, C07 K 2/00, C07 K 4/00

US-CL-PUBLISHED: 435/440; 514/44, 435/6, 435/69.1, 435/91.1, 435/455, 435/456, 435/458, 435/325, 530/350, 530/300, 536/23.1

US-CL-CURRENT: 435/440; 435/325, 435/455, 435/456, 435/458, 435/6, 435/69.1, 435/91.1, 514/44, 530/300, 530/350, 536/23.1

REPRESENTATIVE-FIGURES: NONE

## ABSTRACT:

The present invention provides improved cell delivery compositions. In particular, the invention provides biocompatible endosomolytic agents. In a preferred embodiment, the endosomolytic agents are also biodegradable and can be broken down within cells into components that the cells can either reuse or dispose of. Preferred endosomolytic agents include cationic polymers, particularly those comprised of biomolecules, such as histidine, polyhistidine, polylysine or any combination thereof. Other exemplary endosomolytic agents include, but are not limited to, other imidazole containing compounds such as vinylimidazole and histamine. More particularly preferred are those agents having multiple proton acceptor sites and acting as a "proton sponge", disrupting the endosome by osmolytic action. In preferred embodiments, the endosomolytic agent comprises a plurality of proton acceptor sites having pKas within the range of 4 to 7, which

endosomal lysing component is polycationic at pH 4. The present invention also contemplates the use of these endosomolytic agents as delivery agents by complexation with the desired compound to be delivered. Thus, the present invention also acts as a cell delivery system comprising an endosomolytic agent, a delivery agent, and a compound to be delivered.

**PRIORITY INFORMATION**

[0001] This application claims priority to the co-pending provisional application No. 60/075,272 entitled "Cell Delivery Compositions" filed on Feb. 19, 1998, which is incorporated in its entirety by reference.

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**PALM INTRANET****Application Number Information**

Application Number: **09/251783** [Order This File Assignments](#) Examiner Number: **77334 / LACOURCIERE, KAREN**

Filing or 371(c) Date: **02/17/1999**Group Art Unit: **1635**Effective Date: **02/17/1999**Class/Subclass: **435/006.000**Application Received: **02/17/1999**Lost Case: **NO**Pat. Num./Pub. Num: **6692911/20010006817**

Interference Number:

Issue Date: **02/17/2004**Unmatched Petition: **NO**Date of Abandonment: **00/00/0000**L&R Code: Secrecy Code:**1**Attorney Docket Number: **0492611-0313**Third Level Review: **NO**Status: **150 /PATENTED CASE**Secrecy Order: **NO**Confirmation Number: **3705**Oral Hearing: **NO**Title of Invention: **CELL DELIVERY COMPOSITIONS**Status Date: **01/29/2004**

Bar Code	PALM Location	Location Date	Charge to Loc	Charge to Name	Employee Name	Location
<b>09251783</b>	<b>9200</b>	<b>03/31/2004</b>	<b>No Charge to Location</b>	<b>No Charge to Name</b>	<b>BOADU,NANA</b>	

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L10: Entry 31 of 43

File: USPT

Oct 16, 2001

DOCUMENT-IDENTIFIER: US 6303378 B1

TITLE: Methods for preparing polynucleotide transfection complexes

Brief Summary Text (6):

Engineered viruses are commonly used to deliver genes to cells. Viral vectors are generally efficient in gene delivery but have certain drawbacks, for example stimulation of an immune response when delivered in vivo. As a result, therefore, a number of non-viral nucleic acid delivery systems have been and continue to be developed. Thus, for example, cationic lipids are commonly used for mediating nucleic acid delivery to cells. See, for example, U.S. Pat. No. 5,264,618, which describes techniques for using lipid carriers, including the preparation of liposomes and pharmaceutical compositions and the use of such compositions in clinical situations. Other non-viral gene delivery systems likewise involve positively-charged carrier molecules, for example, peptides such as poly-L-lysine, polyhistidine, polyarginine, or synthetic polymers such as polyethylenimine and polyvinylpyrrolidone.

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L16: Entry 14 of 15

File: USPT

Nov 2, 1999

DOCUMENT-IDENTIFIER: US 5977083 A

TITLE: Method for using polynucleotides, oligonucleotides and derivatives thereof to treat various disease states

Detailed Description Text (275):

This process is superior to present viral vector directed gene therapy and would also enable competitive inhibition of proviral integration, and/or dislocation of the integrated pro-virus. Cellular uptake dynamics would directly define the anti-viral and genetic modulatory capacities of each respective nucleotide. Nucleic acid derivatives having chemical modifications are as described previously (e.g., nucleotides conjugated with poly(L-lysine) or which is modified by, for example, the addition of amino acids such as lysine, histidine and arginine, the addition of optimum concentrations of folate and/or biotin, the addition of the optimum ratios of metals and ions including zinc, manganese and iodine, by the addition of 5'-polyalkyl moieties, cholesterol, vitamin E, 1-2-di-0-hexadecyl-3-glyceryl and other lipophilic moieties and/or modified by the replacement of phosphodiester bonds with phosphothiotate bonds) and combination nucleic acids would be employed.

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L21: Entry 39 of 68

File: PGPB

Jun 27, 2002

DOCUMENT-IDENTIFIER: US 20020082237 A1

TITLE: Cationic polymers and lipids for the delivery of nucleic acids

Detail Description Paragraph:

[0032] The cationic component used in the presently described cationic lipids and polymers may be monovalent, divalent, multivalent, or preferably polyvalent (i.e., polycationic). Examples of monovalent cations capable of associating with DNA include primary amines, including, but not limited to methylamine, ethylamine, etc.), and multivalent amines such as, but not limited to, spermine, spermidine, pentaethylenehexamine, diethylene triamine, pentamethylenehexamine, pentapropylenehexamine. The cationic component is preferably biocompatible or biotolerable. The cationic component may comprise any of a variety of chemical groups that retain a positive charge between pH 5 through pH 8 including, but not limited to, amino groups (or oligo or poly amines), e.g., spermine, spermidine, pentaethylenehexamine (PEHA), diethylene triamine, pentamethylenehexamine, pentapropylenehexamine, etc.), amide groups, amidine groups, positively charged amino acids (e.g., lysine, arginine, and histidine), imidazole groups, guanidinium groups, or mixtures and derivatives thereof.

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L21: Entry 59 of 68

File: USPT

Nov 6, 2001

DOCUMENT-IDENTIFIER: US 6312727 B1  
TITLE: Delivery of nucleic acid materials

Detailed Description Text (147):

Complexes can self-assemble between DNA and cationic polymers which are pH-responsive over the endosomal range, such as poly(ethylene imine). These are attractive polymers for DNA complexation since they possess good ability to transfect cells, perhaps by the mechanism described as the "Proton Sponge hypothesis" (Behr, Chimica 51, 34, 1997). However it is hard to define precisely their degree of ionisation at neutral pH, and therefore they should be used at weight ratios determined experimentally to mediate efficient complex formation. In this example, such a pH-responsive polymer was prepared by partial substitution of poly(L-lysine) with L-histidine. It is important that such polymers retain a significant component of reactive (primary or secondary) amino groups if surface modification is to be achieved using polymers bearing reactive esters. In this example the histidinylated poly(lysine) was allowed to self-assemble with DNA and the resulting particles were stabilised by surface modification using a hydrophilic polymer bearing pendant reactive esters. The hydrophilic polymer used was formed from alternating blocks of poly(ethylene glycol) and tripeptides, designed to introduce proteolytic degradability into the polymer backbone.

Detailed Description Text (172):

11.4 Self Assembly of Complexes Between DNA and Partially Histidine-Substituted poly(L-lysine), and Subsequent Stabilisation by Surface Modification Using pEG-peptide-ONp Repeating Polymer.

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